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Notes on *Carex* — III

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***Carex latebrosa* sp. nov.**

Carex Gayana hyalina Bailey, Proc. Am. Acad. **22**: 135. 1886. Not *Carex hyalina* Boott.

Growing in dense clumps, somewhat stoloniferous, the culms 3–9 dm. high, roughened on the angles, especially above, much exceeding the leaves. Leaves with well-developed blades usually three to six to a culm, all on the lower third, the blades 8–35 cm. long, 1.5–4 mm. wide, flat or somewhat involute, roughened on the margins and towards the apex; spikes linear-elliptic, 1 cm. long or less, from about seven to thirty, aggregated into a linear or linear-oblong head, 2–4 cm. long, 4–8 mm. wide, simple or slightly compound, the lower spikes more or less separate; spikes largely and often entirely staminate, or usually bearing one to several perigynia at or near the base; bracts absent, or the lower occasionally present, shorter than the head, somewhat enlarged at base, acuminate or short-cuspidate; scales ovate-lanceolate, from short-cuspidate to obtusish, usually acutish, straw-colored (without a trace of green at maturity), hyaline, wider and longer than the perigynia which are completely concealed (except where the scales get broken), the whole head appearing as a mass of straw-colored scales, with occasional dark spots, showing the concealed perigynia; perigynia ascending, brownish at maturity, plano-convex, ovate (rather narrowly), 3.5 mm. long, 1.5 mm. wide, broadly rounded at base, tapering into the beak which is about one-half the length of the body, the body slightly spongy at base, nerved on the outer, nerveless but narrowly margined above on the inner surface, the beak serrulate, its apex in age somewhat bidentate; perigynia thin, readily separating from achenes at maturity; achenes lenticular, with suborbicular face, about 1.5 mm. long; stigmas two.

Although referred by Professor Bailey as a variety to the North American plant which has been passing as *Carex Gayana* E. Desv. (*Carex simulata* sp. nov. *infra*), it seems to me that this plant is more closely related to some of the forms of *Carex marcida* Boott. It does not possess the characteristic short-beaked perigynium of the former plant, and this has caused most specimens collected to be referred to the latter plant. However, it is readily

distinguished at sight from all forms of *Carex marcidia*, and is clearly entitled to specific rank. The most easily noticed points of distinction may be contrasted as follows:

Perigynium very abruptly contracted into a very short beak, about one-fifth the length of the body. *C. simulata*.

Perigynium tapering into a beak, one-half the length of the body or more.

Spikes with one to several inconspicuous perigynia, the head appearing a mass of straw-colored scales; staminate flowers conspicuous; blades 1.5–4 mm. wide.

C. latebrosa.

Spikes with about ten perigynia concealed by the scales, but conspicuous; scales tinged with green or brown; staminate flowers inconspicuous; blades 1.5 mm. wide.

C. marcidia.

The following specimens of *Carex latebrosa* (all in the Columbia College herbarium except the New Mexico specimens and the fine specimens collected by Palmer) have been seen:

MEXICO: Sonora, *Thurber* 652, 185-(type); Durango, *Palmer* 96, 1896 (N. Y. Bot. Gard.); San Bernardino, Sonora, *Thurber* 337, June, 1851; Camp Tezotal, Sonora, *Schott* 4, 1855.

NEVADA: Unionville Valley, *Watson* 1227, October, 1867; Spring Valley, *Watson* 1227, September, 1868.

NEW MEXICO: Cienega, *E. O. Wooton*, July 12, 1906; Mogollon Creek, Mogollon Mountains, Socorro County, *O. B. Metcalfe*, July 14, 1903. (Both in Herb. N. Mex. Agric. College.)

***Carex simulata* sp. nov.**

“*Carex Gayana* Desv.” Boott, Ill. Car. 3: 126. pl. 411.

Culms 3–5 dm. high, from long running rootstocks, roughened on the angles, especially above, much exceeding the leaves. Leaves with well-developed blades two to five to a culm, all on its lower third, the blades erect-ascending, 8–30 cm. long, 2–4 mm. wide, flat, roughened on the margins and towards the apex; spikes 5–15, densely aggregated into a linear-oblong, oblong or ovate-oblong head, 12–25 mm. long, 6–10 mm. wide, the individual spikes not separate, but readily distinguishable, the more strongly pistillate ovate-oblong in outline, 7 mm. long, 3.5 mm. wide, with about ten perigynia at base and the inconspicuous staminate flowers above, while other spikes are almost entirely staminate with an occasional perigynium, whole heads being almost entirely staminate or little staminate, as the case may be; bracts absent, or the lower one or two, if present, shorter than the head, long-cuspidate, enlarged at base; scales brown with hyaline margin, strongly cuspidate, wider and noticeably longer than the

perigynia, which are completely concealed; perigynia ascending, brownish at maturity, plano-convex, broadly ovate, 1.8 mm. long, 1.4 mm. wide, broadly rounded at base, abruptly narrowed into a minute bidentate beak about 0.25 mm. long, hardly spongy at base, nerveless or nearly so, not margined, but the upper part of the body and the beak serrulate; achenes lenticular with broadly elliptic face, 1 mm. long; stigmas two.

The earliest description of *Carex Gayana* E. Desv. which I have seen (C. Gay, Fl. Chil. 6: 205) was published in 1854 according to the title-page of the work. However, the plates of this and some other species seem to have been issued in 1853 as *Cyperaceae chilenses* (*Historia de Chile*), and plate 73, figure 3, referred to in the description in Gray's work is here found. The specimens on which the species was based were collected in Chile, but Dr. Boott took up the name for a plant found in western North America, known to him from Fendler's no. 881 and Bourgeau's from "Base of the Rocky Mountains." This last-named specimen is figured by him (pl. 411) as "*Carex Gayana* Desv.," and other authors who have had occasion to deal with the North American plant have followed him, although not without misgivings, the North American plant having been collected but little until recently. The real *Carex Gayana*, however, is a plant bearing much the same general resemblance to the North American plant, now named by me *Carex simulata*, that *Carex stenophylla* Wahl. does to *Carex marcida* Boott. The differences noted may be thus contrasted:

Culms 3.5 dm. high; heads 12-25 mm. long, linear-oblong to ovate-oblong; scales cuspidate; heads much exceeding the leaves. *C. simulata*.

Culms 1-2 dm. high; heads 8-18 mm. long, ovate; scales acuminate; heads little exceeding leaves. *C. Gayana*.

Of this species I have seen the following specimens:

WYOMING: Chug Creek, Albany County, *A. Nelson* 7316, June 29, 1900 (type, in Herb. N. Y. Bot. Garden); Headwaters of Clear Creek, *Tweedy* 3336, July-August, 1900; Point of Rocks, *Merrill & Wilcox* 665, June 19, 1901; Clear Creek, *T. A. Williams*, August 12, 1898.

COLORADO: North Park on edge of Wyoming, *Osterhout*, September 1, 1897; Rocky Mts. (Colorado?) *Vasey* 595.

MONTANA: Montana Valley, Madison County, *A. & E. Nelson* 6483, September 3, 1899.

WASHINGTON: Falson Valley, *Suksdorf*, May–July, 1884.

NEW MEXICO: *Fendler 881*, 1847.

***Carex perglobosa* sp. nov.**

“*Carex incurva* Lightf.?” Bailey, in Coulter, Manual Rocky Mountain Region 390.

Culms erect, 12 cm. high, growing in small clumps, from running rootstocks, smooth on the angles, usually exceeding the leaves. Leaves clustered towards the base of the culms, the blades erect or somewhat spreading, 2–8 cm. long, 0.75–1.5 mm. wide, flattened at base, narrow but hardly involute above, slightly roughened towards the apex; head erect, very globular, about 1 cm. in diameter, the spikes entirely undistinguishable, the staminate flowers apical, very inconspicuous; perigynia numerous; bracts absent; scales ovate-orbicular, brownish with silvery hyaline margin, obtusish or acutish, rather wider than, but exceeded at maturity (usually strongly) by, the perigynia; perigynia brownish at maturity, ovate-elliptic, 4 mm. long, 2.25 mm. wide, somewhat inflated and slightly nerved on both faces, rounded at base, gradually tapering into the serrulate bidentate beak which is one third or less of the length of the marginless body; achenes lenticular with oblong-orbicular face, 1.75 mm. long, 1.25 mm. wide; stigmas two.

This species which occurs in the high mountains of Central Colorado has heretofore been referred to the circumboreal *Carex incurva* Lightf., a species which in America extends south in the Canadian Rocky Mountains as far as Banff, but which I have not seen from the United States. The species are, however, clearly distinct, and may be distinguished from one another as well as from *Carex vernacula* Bailey (*C. foetida* Am. authors) as follows: Leaf-blades 2–3.5 mm. wide; perigynium little exceeding scale at maturity.

C. vernacula.

Leaf-blades 1.5 mm. wide or less; perigynium much exceeding scale at maturity.

Head suborbicular to short-oblong, the spikes apparent; perigynium 3 mm. long, 1.5 mm. wide, stipitate, not inflated. *C. incurva.*

Head orbicular, the spikes not apparent; perigynium 4 mm. long, 2.25 mm. wide, not stipitate, somewhat inflated. *C. perglobosa.*

The following specimens have been examined, all from Colorado:

Mt. Baldy, Summit County, *Mackenzie 167*, August, 1901 (type, in Herbarium K. K. Mackenzie); *Parry 385*, 1861; Gray's Peak and vicinity, *Patterson*, September 2, 1885; Silver Plume, *Rydberg*, August 21, 1895.

Carex agrostoides sp. nov.

Culms 4–8 dm. high, exceeding the leaves, roughened on the angles, the lowermost sheaths bladeless, conspicuous, the rootstalks short. Leaves with well-developed blades two to four to a culm, usually 2–3 dm. long, long-attenuate, 1–2 mm. wide, strongly involute, roughened towards the apex; head decompound, 4–7 cm. long, 8–20 mm. wide, the lower one or two branches more or less separated, the upper closely aggregated; spikes very numerous, closely sessile, distinguishable with difficulty, ovate-oblong, usually 2–5 mm. long, 1.5–2.5 mm. wide, containing one to several perigynia in the middle, the remainder staminate; bracts absent, or few and short (15 mm. long); scales ovate-oblong, obtusish to short-acuminate, brownish, with usually broad, whitish midrib, and conspicuous hyaline margins, wider than but slightly exceeded by the mature perigynia; perigynia lanceolate-cuneate, plano-convex in cross-section, 3 mm. long, 1 mm. wide, rounded-truncate at base, tapering at apex into a beak longer than the body, with serrulate margins and bidentate apex, the body nerveless on inner, nerved on outer, surface; achenes lenticular, 1 mm. long, 0.5 mm. wide; stigmas two.

This species has long been represented in the Columbia College herbarium by two rather fragmentary specimens, but it was not until I received from Prof. E. O. Wooton two fine sheets collected by himself that I felt justified in describing it. Probably most closely allied to *Carex latebrosa* (*supra*), it is readily distinguished not only by the decompound head, but also by the narrow, long-beaked perigynia. The name given to this plant by me owes its origin to the strong resemblance the head has to the dried up, congested panicles of some species of *Agrostis*.

The following specimens have been examined:

NEW MEXICO: Luna, northwest of Mogollon Mountains, Socorro County, altitude 6500 feet, *E. O. Wooton*, July 28, 1900 (type consisting of two sheets in Herb. New Mexico Agricultural College); Mangus Springs, *Rusby 425*, May, 1881 (Columbia College herbarium).

ARIZONA: San Francisco Mountains, *Rusby 426*, April, 1881 (Columbia College herbarium).